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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/780,375
Filing Date: February 12, 2001
Appellant(s): HAUGER ET AL.

Walter Ottesen
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 13 January 2009 appealing from the Office action mailed 14 July 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,601,549	Miyagi	2-1997
5,889,611	Zonneveld	3-1999
4,666,261	Arai	5-1987

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 41, 44 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyagi, US 5,601,549 in view of Zonneveld, US 5,889,611.

Regarding claim 41, Miyagi discloses a surgical microscope (fig. 1) with a viewing unit (at least 15 and 12) for viewing an object (not shown) and defining a viewing beam path (fig.1); an image data supply (28a-c) for supplying image data (column 2, lines 54-66); an image projection module (11a') connected to said image data supply (via 25) for receiving said image data (column 2, lines 54-66) and inputting said image data into the viewing beam path (fig. 1); said image projection module including an image display unit (30) for displaying the image data; a first beam splitter (16a) mounted in said viewing beam path for receiving said image data displayed by said display unit (30) and passing said image data into the viewing beam path; an image recording module (20 and 25) for recording said data image (from 28a-c) and an object image (from 23) of said object (not shown); said image recording module including an image sensor (23); said image sensor (23) generating an image signal from said object image (column 2, lines 50-53); said image recording device includes a mixer (in 25) connected to said image sensor (23) for receiving said image signal (fig. 1) and being connected to said image supply data (28a-c) for receiving image data supply for receiving said image data (fig. 1) to mix said image signal and said image data and generate an output signal (column 2, lines 50-53); a video-recorder/monitor (30) connected to said mixer (25) for receiving said output signal for display to a surgeon (not shown); a shutter (column 3, lines 63-67) interposed between the first beam

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splitter (16a) and said object (not shown) to facilitate viewing said image data in said viewing unit (column 3, lines 63-67). Miyagi discloses the claimed invention except for the object image being supplied from by said viewing unit; a second beam splitter mounted in said viewing beam path for directing said object image onto said image sensor. Zonneveld discloses a surgical microscope (fig. 1) with a viewing unit (3) for viewing an object (20) and defining a viewing beam path (fig. 1); an image projection module (33) for supplying data in the form of a data image (column 6, lines 6-16), including an image display unit (34 and 35) for displaying the image data; and a beam splitter (37 and 38 and column 6, lines 32-65) mounted in said viewing beam path for receiving and passing said data image to said image sensor (40) and for directing said object image being supplied from by said viewing unit (fig. 1) onto said image sensor (column 6, lines 32-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a second beam splitter and image sensor to the system of Miyagi to be able to receive and combine an object image from the viewing path as taught by Zonneveld and provide further flexibility by enabling the user to be able to see patient conditions like heartbeat with every microscopic view.

Regarding claim 44, Miyagi discloses the claimed invention except for wherein said image display unit is an LCD image display unit. Zonneveld further teaches that the image display unit is an LCD image display unit (column 2, lines 35-36). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the image display unit of Miyagi be an LCD image display unit as taught by Zonneveld as it is a reliable, easy to obtain display commonly used in a microscope system.

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Regarding claim 49, Miyagi discloses wherein said image sensor is a CCD chip (column 2, line 47).

Claims 47-48 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyagi in view of Zonneveld as applied to claim 44 and further in view of Ernstoff et al., US 4,090,219 (henceforth Ernstoff).

Miyagi in view of Zonneveld as applied to claim 44 above disclose the claimed invention except for the image display unit including a reflection display and wherein the brightness of said image display unit is increased by a time-dependent sequential illumination of the reflection display with only a single color or a reflection display illuminated sequentially with different colors as a function of time; and wherein said image display unit includes a rotatably mounted filter wheel for illuminating said reflection display; and a device for synchronizing the rotation of said filter wheel to said clock frequency of said reflection display. Ernstoff teaches in fig. 8, a reflection display (310, column 2, lines 57-58) illuminated sequentially with different colors as a function of time (column 8, lines 48-56) or illuminated sequentially with a single color as a function of time (in so far as the wheel can be stopped on a single color and, inherently, if more time is spent on a single color, it will be brighter than compared to a display exposed to sequential RGB illumination), the display is driven at a clock frequency (column 8, lines 65-66) and has a device for synchronizing the rotation of said filter wheel to said clock frequency of said reflection display (322 and 306; Ernstoff). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the reflection display of Ernstoff as the

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display means in the system of Miyagi in view of Zonneveld to be able to provide high resolution and high brightness full color images (Ernstoff, column 2, lines 24-26).

Claims 42-43 and 45-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyagi in view of Zonneveld as applied to claims 41 and 44 above and further in view of Arai, US 4,666,261.

Regarding claims 42-43, Miyagi in view of Zonneveld as applied to claims 41 and 44 above further disclose an imaging optic (31) mounted downstream of said image display unit (fig. 1) and being arranged between said image display unit (30) and said beam splitter (16a). Miyagi in view of Zonneveld as applied to claims 41 and 44 above disclose the claimed invention except for the specifics of the imaging optics for projecting the image, i.e., said image projection module including a first and second plano-convex lens, a plano-concave lens, and a concave-convex lens,. Arai teaches a projection lens assembly (embodiment 1) with a first (lens 1) and second (lens 3) plano-convex lens, a plano-concave lens (lens 4), and a concave-convex lens (lens 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the projection lens assembly of Arai in the system of Miyagi in view of Zonneveld to prevent focal variations due to environmental factors (Arai, column 7, lines 34-39).

Regarding claims 45-46, Miyagi in view of Zonneveld and Arai as set forth above disclose the claimed invention except for the ratio of said first focal length and said second focal length being within a range from 1.9 to 2.5. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have focal lengths within the claimed ratio,

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since it is been held that discovering an optimum value of a result effective variable involves only routine skill in the art. One would have been motivated to adjust the focal lengths for the purpose of adjusting the size/magnification of the projected image. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977) See also In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claims 51 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyagi in view of Zonneveld and Arai as applied to claim 42 above and further in view of Ernstoff.

Miyagi in view of Zonneveld and Arai as applied to claim 42 above disclose the claimed invention except for the image display unit including a reflection display and wherein said image display unit includes a rotatably mounted filter wheel for illuminating said reflection display; and a device for synchronizing the rotation of said filter wheel to said clock frequency of said reflection display. Ernstoff teaches in fig. 8, a reflection display (310, column 2, lines 57-58) wherein said image display unit includes a rotatably mounted filter wheel (302; Ernstoff) for illuminating said reflection display (fig. 8; Ernstoff; and a device for synchronizing the rotation of said filter wheel to said clock frequency of said reflection display (322 and 306; Ernstoff). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the reflection display of Ernstoff as the display means in the system of Miyagi in view of Zonneveld and Arai to be able to provide high resolution and high brightness full color images (Ernstoff, column 2, lines 24-26).

(10) Response to Argument

Appellant first argues that elements 20 and 25 of Miyagi do not meet the limitation of “an image recording module for recording said data image and an object image of said object” and

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specifically that control unit 25 can in no way be interpreted as a part of a recorder but instead only functions to prepare a picture signal of data obtained from 28a-c (see arguments, page 15, line 6-page 17, line 8. The examiner respectfully disagrees. By appellant's own admission the control unit functions to prepare a picture signal of both data image (from 28a-c) and object image (from sensor 23) and in doing so, it is the examiner's position, that the control unit (25) must record information about these images in at least so far as temporary memory is used in the control system when controlling/directing the information to the monitor (30). Therefore, the control unit is considered an image recording module.

Appellant further argues on page 17, line 9-page 18, line 1 of the arguments that the control unit is not a mixer in the same way as the instant invention because it does not take the object image from a second beam splitter/directly from the viewing path. In response to this argument against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). It is noted that the combination of Miyagi and Zonneveld adds the flexibility of combining an image taken directly from the viewing path by a second beam splitter with the image data.

Appellant additionally argues there is no suggestion as to how one of ordinary skill in the art would integrate the elements to come up with the appellant's invention (see page 19, paragraphs 1-3 of the arguments). In response, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the

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references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Appellant also argues that Zonneveld only has one beam splitter and therefore there is not second beam splitter devoted to an image sensor which, in turn, is connected to a mixer as in the appellant's invention (see arguments page 20). Again, in response to this argument against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). It is noted that the combination of Miyagi and Zonneveld provide a second beam splitter/image directly from the viewing path via a sensor which would go to control unit/mixer 25.

In response to appellant's argument that Arai is nonanalogous art (see page 22, line 1- page 23, line 1), it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the prior art is reasonably pertinent to the particular problem with which the applicant was concerned, i.e., projecting an image in an optical system.

Further, in response to appellant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning (arguments, page 23, lines 9-23), it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction

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based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Also, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation of preventing focal variation due to environmental factors was found in the Arai reference.

In response to appellant's argument that Ernstoff is nonanalogous art (see page 22, line 1- page 23, line 1), it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the prior art is reasonably pertinent to the particular problem with which the applicant was concerned, i.e., projecting an image with a reflection display.

Further, in response to appellant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning (arguments, page 24), it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within

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the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Also, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation of providing high resolution and high brightness full color images was found in the Ernststoff reference.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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